ORIGINAL PAPER

Does Money Buy Votes? The Case of Self-Financed Gubernatorial Candidates, 1998–2008

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Abstract   Because campaign spending correlates strongly with election results, observers of American politics frequently lament that money seems to buy votes. However, the apparent effect of spending on votes is severely inflated by omitted variable bias: The best candidates also happen to be the best fundraisers. Acting strategically, campaign donors direct their funds toward the "best" candidates, who would be more likely to win even in a moneyless world. These donor behaviors spuriously amplify the correlation between spending and votes. As evidence for this argument, I show that (non-strategic) self-financed spending has no statistical effect on election results, whereas (strategic) externally-financed spending does.

Keywords   Campaign effects · Campaign spending · Gubernatorial elections

After earning hundreds of millions of dollars at the helm of Goldman Sachs, Jon Corzine turned his eyes to politics. He spent $62 million of his own money in his successful 2000 bid for New Jersey's vacant Senate seat. In doing so, he more than doubled the previous self-finance record for a Senate race. Long before the campaign ended, his extravagant spending began to attract national media attention. Much of it criticized him for "buying" the race with self-finance. In June of 2000, for example, *Newsweek* ran a typical headline: "The New Jersey Purchase: Jon Corzine's $36 Million Campaign for the Senate." Five years later, Corzine sought a promotion to the governor's mansion. Again, he financed his campaign out of his

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own pocket, this time spending $42 million. In total, he self-financed over $100 million in these two races.

Of course, Corzine is not the only gubernatorial candidate to have lavishly self-financed his campaign. Between 1998 and 2008, four candidates spent $30 million or more of their own money on a gubernatorial campaign. Another eight spent at least $5 million, and another fifteen spent at least $1 million. Of the 290 major-party gubernatorial candidates for whom campaign finance data are available during this period, 23% gave $50,000 or more to their own campaigns. To put this into perspective, consider that the median household income in the United States is just under $50,000. That means roughly one-quarter of gubernatorial candidates gave more money to their campaigns than a typical household earns in an entire year.

As the *Newsweek* headline attests, many people are quick to accuse self-financers of attempting to "buy" their way into office. The evidence is sketchy, though. Of the 290 gubernatorial candidates who self-financed at least $50,000 between 1998 and 2008, only 26% won. Of those who self-financed at least $1 million, only 18% won.[1] By contrast, campaign funds raised from outside sources do seem to help candidates. Between 1998 and 2008, whichever candidate raised the most external funds won over 83% of the time. I present detailed statistical analysis below that confirms this general pattern. Self-financed spending does not correlate with vote shares, but externally-financed spending does.

This discrepancy points to a deeper theoretical misunderstanding, both popularly and within academia, about the role of money in political campaigns. When analysts or pundits observe that vote margins increase with spending, they often conclude that money somehow "buys" votes—perhaps because money can pay for pollsters, campaign managers, advisors, mailers, and advertising time, all of which enable candidates to refine and publish their campaign messages. But if money buys votes, then it should not matter one whit whether that money comes from external campaign donors or from the candidate's own wallet.

To be clear, this is not a paper about self-financed gubernatorial candidates. This is a paper about the role of campaign spending in influencing election results. I use self-financed gubernatorial candidates merely as a case study to illustrate my broader point. Stated simply, my broader point is this: campaign spending does not have much of a causal relationship with vote shares. Instead, the apparent correlation between spending and votes is spuriously enhanced by something else—namely, by the strategic decisions of campaign donors.

A Theory of Money and Votes

Money is a scarce resource. Because it is scarce, people do not aimlessly give their money to candidates without considering what their contributions might produce. Perhaps some campaign donors seek to help elect like-minded politicians to office.

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[1] In calculating these percentages, I omit races where *both* candidates spent $50,000 (or $1 million). I also omit the handful of races where an independent or minor party candidate won.

Perhaps others seek post-election access for their lobbyists. Perhaps others have more corrupt motives. But no matter why a potential donor wants a particular candidate to win, he is extremely unlikely to get any return on his investment unless his chosen candidate actually wins.

Francia et al. (2003) have shown that most campaign donors are either "investors" or "ideologues." Investors are motivated primarily by access. That is, they hope that their contributions will, at the very least, ensure that their lobbyists' phone calls get returned. The lobbyists' pitch may fall on deaf ears, but at least they will be given an opportunity to make their pitch. Many corporate PACs behave as "investors," donating funds to all sorts of candidates in hopes of ensuring lobbyist access (Francia et al. 2003, p. 100). By contrast, "ideologues" are motivated primarily by ideological goals, often involving controversial issues like abortion, climate change, gun rights, and gay marriage. Activists don't want mere access; they want fundamental policy change. As such, activists hope that their contributions will enable their preferred candidates to defeat their opponents at the ballot box (Francia et al. 2003, p. 101). Although Francia et al. wrote specifically about individual campaign donors, PACs also fit into the same types (Eismeier and Pollock 1986, p. 198).

These different goals lead to different donation strategies. "Investors" are less concerned about who wins office than about being on the winner's good side. As a result, investors give to likely winners—usually incumbents—of any ideological persuasion (Herrnson 2008, pp. 142–143). They might also target incumbents in trouble, in hopes of earning some gratitude (Jacobson and Kernell 1983). Investors are especially likely to give to candidates whose responsibilities will affect the donors' financial interests. On the other hand, "activists" are less concerned about being on the winner's good side than about seeing like-minded candidates win. As a result, activists give to candidates in competitive races in hopes of changing the outcome (Herrnson 2008, pp. 141–142). Although investors and activists differ as to whether they prefer donating to lopsided or competitive races, they agree on one thing: Neither type of donor will waste any money on a candidate with little chance of winning. This is a major reason that incumbents are able to raise so much more money than challengers (Jacobson 1978; Green and Krasno 1988; Krasno et al. 1994). Campaign donors have many candidates to choose from when deciding where to contribute their funds. Because donors are strategic, both types of donor avoid contributing money to hopeless candidates (cf. Sorauf 1992).

Campaign donors, then, are "sharply responsive" to the strategic environment (Jacobson 2004, pp. 165–166); "giving money is a decision that often involves strategic considerations" (Mutz 1995, p. 1039). This "sharply responsive" strategic behavior spuriously enhances the correlation between candidate spending and vote shares. When deciding which candidates to support, potential donors undoubtedly assess each candidate from a variety of angles. In addition to considering political experience, donors may consider a candidate's charisma, policy positions, resolve, likability, and public relations skills. Strategic donors will consider all these aspects of "quality" relative to other candidates. Not coincidentally, voters consider similar factors when deciding how to vote (Thomas et al. 1984; Popkin 1993; Baum 2005; Merolla et al. 2007). "Just as this consideration [i.e. candidate strength] is

sometimes important to people's vote choices, it is also important in determining the flow of money into campaigns" (Mutz 1995, p. 1039).

The result, then, is that donors will be drawn to the exact same candidates that voters are drawn to. Better candidates raise (and therefore spend) more money, and better candidates also win more votes. As a result, there will be a strong correlation between campaign spending and vote shares, but that strong correlation does not imply causation. After all, the candidates who raise the most money would almost certainly win more votes than their opponents even in a moneyless world.

An Analogy

An analogy may clarify the direction that this article is heading. Almost 30 years ago, Jacobson and Kernell (1983) revolutionized the study of electoral politics by demonstrating the profound importance of challenger quality. They found that "quality" (i.e. politically experienced) challengers were strategic; they preferred to run only when the probability of victory was high. For example, quality challengers prefer to run in open seats rather than against incumbents. They also prefer to run when their party has a strong national reputation.

Jacobson and Kernell's theory resolved what had been a troubling puzzle in the Congressional elections literature. Earlier work had shown that Congressional candidates from the president's party won more votes when the president was popular and when the national economy was strong (e.g. Tufte 1978). However, this relationship was found only in aggregate election results—not in individual polling data. Survey researchers could not find a strong enough connection between individual economic evaluations and Congressional candidate preference at the individual level to explain these aggregate findings (Fiorina 1978; Hibbing and Alford 1981).

Jacobson and Kernell's explanation resolved this puzzle. They showed that strategic decisions by challengers spuriously enhanced the apparent relationship between national conditions and House election results: "The strategic decisions [by challengers] so structure the vote choice that electoral results are consonant with national level forces even if individual voting decisions are not" (1983, p. 3). Previously, political scientists had erred in expecting to find a direct causal link between national conditions and voting decisions. They had committed the classic error of confusing correlation with causation. Instead, "the electorate's ability to act as a 'rational god of vengeance and reward' when disenchanted with current leaders depends, at least in part, on an assist from strategic politicians" (Brown and Jacobson 2008, p. 385).

Correlation and Causation in Campaign Spending

My argument is an extension of Jacobson and Kernell's logic. Both in academia and out, few have failed to notice the strong correlation between campaign spending and electoral success—a seemingly universal correlation that arises at every level of

politics, including in gubernatorial elections (Brown and Jacobson 2008). Observers are tempted to infer that a direct causal link between spending and vote shares creates this strong correlation. Indeed, there is plenty of circumstantial evidence to support such a conclusion. We know, for example, that candidates use their campaign funds to hire pollsters, campaign managers, media consultants, webmasters, opposition researchers, fundraisers, and other advisors to help them run their campaigns (Herrnson 2008, pp. 73–75). We also know that candidates send postcards, run advertisements, and deploy get-out-the-vote squads on election day. Although there is considerable academic disagreement as to whether and how campaigns matter (e.g. Brady and Johnson 2006), few would contend that spending makes no difference at all.

At the same time, however, we must remember that campaign money does not grow on trees. As ever, correlation does not imply causation. Jacobson and Kernell showed that strategic decisions by potential candidates create a spurious correlation between national conditions and election results. Similarly, I argue that strategic decisions by potential donors create a spurious correlation between campaign spending and election results. Regardless of whether campaign spending has any direct effect on voters, a candidate's ability to raise money in the first place speaks volumes about that candidate's quality. If a candidate is good enough to attract lots of campaign donations, that candidate would almost certainly be good enough to attract lots of votes—even in a moneyless world.

As noted earlier, there is no question that campaign spending is strongly correlated with vote shares. I am suggesting two possible explanations for this correlation. Figure 1 depicts these two possible explanations graphically. First, it is possible that campaign spending has a direct causal effect on election results; see Panel A in Fig. 1. Much of the legislation and journalism that we see about campaign spending assumes that this direct causal effect explains the entire correlation between spending and votes. In the direct causal story, money spent on polling, advertising, speechwriters, and advisors causes voters to turn out and vote for the well-heeled candidate. Reformers had this direct causal pathway in mind when they warned that American elections are "no longer a democracy but a plutocracy."[2] Editorial writers had this direct causal pathway in mind when they rebuked the Supreme Court for striking down the Bipartisan Campaign Reform Act's "millionaire amendment" in June 2008—a provision intended to weaken self-financed candidates. Regarding this decision, the *New York Times* complained that the "Court gave a big boost to rich candidates" for whom "being rich [is] such a great political advantage"; the *Washington Post* argued that "the public good is served when voters have confidence that seats cannot be bought."[3] The *Boston Globe* had this direct causal pathway in mind when its editors spoke out against Tony Sanchez's self-financed campaign for Texas governor: "Candidates who are less than super-rich face an enormous disadvantage against someone who can write checks and buy advertising without limit."[4]

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[2] Sheila Krumholz (Center for Responsive Politics) on "The World Today" (CNN), 5/26/2000.

[3] *Times* editorial: June 28, 2008, p. A16. *Post* editorial, April 22, 2008, p. A18.

[4] Editorial "Last Dash for Cash," November 4, 2002, p. A14.

(A) Direct Causation   **(B)** Indirect Correlation

X: Campaign spending   X: Candidate's viability
relative to opponent

Y: Election result   Z: Contributions   Y: Election result
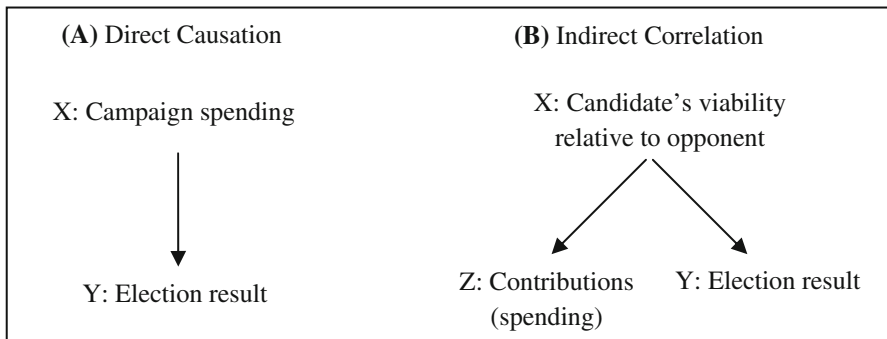(spending)

Fig. 1 Possible relationships between campaign spending and electoral success

By contrast, Panel B in Fig. 1 depicts an indirect connection between money and election results. More precisely, in Panel B the correlation between spending and votes is entirely spurious. If campaign donors are strategic, they will give their scarce dollars to the best candidates. If voters are intelligent, they will likewise give their scarce votes to the best candidates. If the factors that enable some candidates to raise more money than others are exactly the same factors that enable some candidates to win more votes than others, then the candidates who raise (and spend) the most money would have won more votes even in a moneyless world.

Panels A and B depict radically different explanations of the correlation between spending and votes. The direct causal pathway in Panel A emphasizes how the money is used, regardless of its source; the indirect correlation in Panel B emphasizes the money's source, regardless of how it is used. To the extent that the indirect correlation dominates, the direct pathway is spurious.

Of course, reality almost certainly lies somewhere between these extremes. Given the popular tendency to think only about Panel A, however, I emphasize Panel B in this article. If Panel B accurately describes reality, even partially, then we must interpret correlations between spending and votes more cautiously than we have heretofore done. We overestimate the direct effect of campaign spending if we fail to also account explicitly for the possibility of a spuriously amplified correlation.

Analytic Approach

My theoretical argument, then, is that much of the correlation between spending and votes is caused spuriously by candidate quality. Empirically, the next step is to measure the relative strength of the two causal stories depicted in Fig. 1. When sorting out causality questions, political scientists often rely on one of two methodological approaches: Randomized experimentation or instrumental regression. Unfortunately, neither approach is perfectly suited to this case. Randomized experimentation would require randomly allocating large amounts of campaign funds among candidates. While such an experiment would yield wonderfully

accurate estimates of the true effect of spending on votes, however, it has obvious practical problems.

Likewise, it is not clear that instrumental regression can help us. Instrumental regression could estimate the true causal effect of spending on votes, but only if we can first identify instruments that are correlated with candidate fundraising ability but not with voter appeal. Several researchers have engaged in a long and profitable debate about whether appropriate instruments exist (e.g. Jacobson 1980, 1990; Green and Krasno 1988, 1990; Bartels 1991; Gerber 1998; Bardwell 2005). After reviewing this debate, Milyo offers a discouraging assessment: "To the vexation of researchers, it is difficult to find legitimate instruments for campaign spending. It is hard to imagine a determinant of campaign spending … which is not itself either a determinant of electoral success or a proxy for some unobserved determinant of electoral success (integrity, leadership skills, wisdom and so on)" (Milyo 1998, p. 24). If there are no candidate attributes that would be attractive to donors but not to voters, then there are no legitimate instruments.

Of course, randomized experimentation and instrumental regression are not the only available options. Levitt (1994), for example, proposed one clever way to separate the effects of spending from the effects of candidate quality. He examined repeated contests between the same two Congressional candidates. By differencing each candidate's vote share and spending from one election to the next, he hoped to eliminate the effects of candidate quality. He found an "extremely small impact" of campaign spending, just as I find below. Of course, an individual study cannot end a debate. More than a decade after Levitt's work was published, Jacobson (2006) wrote, "It has become increasingly clear that progress on the question requires new research strategies…. Despite more than 20 years of research, we still have plenty to learn" about the effects of campaign spending.

I have cited many clever studies, yet they have not ended the debate. Clearly, Jacobson is correct that we should seek additional research strategies. I propose one possibility based on a simple insight: It turns out that not all donors respond strategically to candidate quality when deciding which candidate to give their money to. Drawing on the existing literature, I wrote above that "investors" and "ideologues" are carefully strategic when deciding which candidates to fund. But there is one type of donor that doesn't ever seriously ask herself which candidate to give her money to: The self-financed donor. I will provide theoretical and empirical evidence shortly that self-financing decisions are not strategic. For the moment, however, let us treat the proposition that self-financing is not strategic as a given assumption.

If self-financing is not strategic, then the only relationship that can exist between self-financed spending and election results is the direct causal relationship shown in Panel A of Fig. 1. By contrast, a correlation between externally-financed spending and vote shares could theoretically arise as a result of either pathway shown in Fig. 1.

If self-financing is not strategic, then we can compare the relative statistical effects of self-financed and externally-financed spending on election results to make inferences about the relative strength of the direct and indirect pathways. Suppose for a moment that the correlation between spending (generally) and votes is entirely

causal, as in Fig. 1s Panel A. In that case, then self-financed spending should have the exact same effect on vote shares as externally-financed spending has. After all, if money spent on advertisements, mailers, advisers, pollsters, and so forth actually helps persuade or mobilize voters, then it should not matter whether that money came from external donors or from a candidate's own pocket. Thus, my null hypothesis is that money from any source will have the same statistical relationship with vote shares. If I cannot reject this null hypothesis, then we cannot reject the possibility that the correlation between campaign spending and votes is entirely causal.

H_0 Self-financed spending has the same marginal effect on vote shares as externally-financed spending does.

By contrast, suppose for a moment that the correlation between spending and votes is entirely spurious, as in Panel B of Fig. 1. In that case, self-financed spending will have no relationship at all with vote shares. Because self-financed contributions are not strategic responses to candidate quality, the correlation between self-financed spending and votes will not be spuriously inflated by candidate quality. However, even if the correlation is entirely spurious, externally-financed spending should still have a strong relationship with vote shares. Thus, my alternative hypothesis is that the relationship between externally-financed spending and votes is stronger than the relationship between self-financed spending and votes.

H_1 Externally-financed spending has a significantly stronger relationship with election results than self-financed spending does.

To be clear, I have suggested two specific empirical points. First, I have argued that the statistical relationship between *self-financed spending* and votes is an estimate of the direct causal effect shown in Panel A of Fig. 1—assuming that self-financing decisions are not strategic. Second, I have argued that the statistical relationship between *externally-financed spending* and votes is an estimate of the combined effects of Panels A and B from Fig. 1. Together, these two points suggest an interesting implication: We can infer the importance of Panel B by subtracting the estimated effect of self-financed spending from the estimated effect of externally-financed spending.

I will now introduce my data and variables. After doing so, I will present evidence supporting my claim that self-financed spending is not strategic. I will then proceed with my main analysis, showing that self-financed spending does not have the same relationship with votes that externally-financed spending has.

Data and Variables

I test these hypotheses using campaign contributions data for gubernatorial general elections from 1998 to 2008, as compiled by the National Institute on Money in State Politics. In my main analysis, I will use data on each major-party candidate's self-financed and externally-financed spending to predict the Democratic

candidate's vote share.[5] Spending by the Democratic candidate ought to increase the Democratic vote share; spending by the Republican ought to do the opposite.

Unfortunately, state-to-state differences in population complicate my analysis of the effects of spending. Those who study Senate elections have observed that spending generally rises with population but at a decreasing marginal rate; as a result, neither per-voter nor total spending figures are a perfect measure (Abramowitz and Segal 1992; Gerber 1998; Jacobson 1980, 1985). To compensate for the decreasing marginal relationship between spending and population, I divide all spending variables (in $100,000s) by each state's logged population using annual Census estimates.[6] This technique explicitly accounts for the decreasing marginal effect of population on spending.

To the extent possible, I also control for candidate quality. Of course, many aspects of candidate quality are not directly measurable, such as charisma. Still, some indicators seem reasonable. For example, previous work has shown that gubernatorial incumbents enjoy significant reelection advantages (Ansolabehere and Snyder 2002; Tompkins 1984; Turett 1971), so I include dummies indicating the incumbent's political party, with open races as the omitted category. I also measure each candidate's political experience using Squire's (1992) index. In contrast to other measurement schemes developed by those who study Congressional elections, Squire's scale is particular to the gubernatorial context. For candidates who have previously held a political office, Squire's index accounts both for the size of the previous office's constituency and also for the previous office's political significance. For example, even if a state legislator and a member of the U.S. House came from equally large districts, Squire's index would award the member of Congress additional points on account of her office's higher position on the political ladder. Squire's method produces scores ranging from 0 (no previous political experience) to 600 (former governor), although most scores tend to cluster between 0 and 100 (for a local politician or state legislator) or in the upper half of the scale (for a former statewide elected executive like an attorney general).[7] The results reported here can also be obtained using other reasonable measures of experience, as detailed in an online appendix.[8]

I also include the incumbent governor's net approval rating from an updated version of the job approval ratings database first described in Beyle et al. (2002).[9]

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[5] My analysis examines only major-party candidates. A few races have featured significant independent or minor party candidates; excluding such races does not change my findings.

[6] I use this procedure only in the main analysis, where spending is used to predict votes. Similar results also obtain when spending is measured per capita, in the aggregate, or using other reasonable methods. These alternative specifications are available in an online appendix. In the portion of this paper where I show that self-finance is not strategic, I do not divide spending by logged population; instead, I simply control separately for logged population.

[7] To obtain Squire's scores for each candidate in the sample, a team of research assistants searched Lexis-Nexis news archives, various volumes of *Who's Who in American Politics*, and official websites to compile candidate biographical information for all major-party candidates during this period. The resulting data were then coded using Squire's method.

[8] The online appendix is available on the author's website: http://adambrown.info/p/research.

[9] Available online at http://www.unc.edu/~beyle/jars.html.

I subtract 50 from each governor's approval rating, so that a positive number indicates net approval and a negative number indicates net disapproval. Given that the dependent variable in the main analysis measures the Democratic candidate's share of the vote, I multiply these net approval ratings by (−1) for Republican incumbents.[10] Unfortunately, polling data are not available for every governor. Including this approval variable reduces the sample size from 145 elections to 88. Nevertheless, the online appendix shows that excluding this variable and using the full sample yields results substantively similar to those reported below.

Finally, I include a measure of state-level partisanship: The Democratic presidential candidate's share of the state's two-party vote. For gubernatorial elections held in non-presidential years, I calculate the linearly weighted average of the previous and future presidential contests. Descriptive statistics for all variables are in the online appendix.

Is Self-Financed Spending Strategic?

A critical claim in this analysis is that self-financed contributions are not strategic, so I will pause to consider this point. There is no question that money is a scarce resource even for wealthy candidates; by calling self-finance non-strategic, I am not calling it non-rational. Before proceeding, then, I should clarify what I mean by "strategic." For a self-financing decision to be "strategic" in a way that complicates my analysis, then it must be a response to the candidate's probability of victory. Suppose that candidates self-finance only when their odds of victory look good (or poor, for that matter). If there is a relationship between a candidate's probability of winning and a candidate's decision to self-finance, then self-financing is strategic. If there is not a relationship, then self-financing is not strategic—at least, not in a way that would undermine my analytical approach.

Non-strategic self-financing can still be rational. Indeed, Steen (2006) shows that self-financing has a clear rational component. For example, in looking at Congressional candidates she finds that a candidate is more likely to self-finance if the costs of doing so are lower—that is, if the candidate is personally wealthy. Steen also speculates that self-finance will occur more when political conditions appear conducive to victory, although she does not test this speculation empirically.[11] Other researchers have speculated the opposite, supposing that certain "strategies are

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[10] Approval data are collected at different times in each state. I use the average of all polls in a state from the first 6 months of the election year. This time frame comes prior to the onset of major campaigning. It is therefore a measure of the incumbent's strength going into the election rather than a measure of the challenger's success in attacking the incumbent.

[11] In her excellent and thorough book, Steen does not test whether the overall decision to self-finance is "strategic" in the sense that I use the term here. However, she does find evidence of other strategic behaviors. For example, she finds that candidates are strategic in deciding whether to spend their self-financed money early or late in the campaign. Moderate self-financers tend to frontload their spending, whereas extreme self-financers do not. There does not seem to be any theoretical reason that these sorts of patterns might interfere with my analysis. Just to be sure, the supplementary analysis in the online appendix shows that my conclusions do not change even when extreme self-financers are excluded from the analysis.

irrelevant to self-financed candidates" (Cho and Gimpel 2007, p. 256) or that self-finance is "not subject to such stringent strategic calculations" (Brown and Jacobson 2008). To date, no researchers have tested directly whether the overall decision to self-finance is strategic.

We have two good reasons to expect self-finance *not* to be strategic. First, major party nominees for high office have already chosen to make a serious run. That is, they have already decided that conditions appear good enough to justify a major investment of their time and professional pride. Those who lose one statewide race rarely get a second chance (Leal 2006, p. 25). If a wealthy candidate has misgivings about whether investing money into her own campaign is worth it, then she probably would not have declared as a candidate in the first place. Given that all candidates have already decided that declaring their candidacy was worthwhile, then we might reasonably expect all candidates to believe that giving their candidacy a full effort is worthwhile. Thus, the only factor likely to separate the self-financers from the non-self-financers is ability to pay—not belief in one's own viability. After all, belief in one's own viability should be constant among all major party gubernatorial nominees.

Second, there is another important reason that we might not expect self-finance to be strategic. Consider a PAC with $100,000 on hand and several potential candidates that it could give this money to. The PAC will carefully consider the candidates running in each race and place its money wherever the expected return is greatest, as described earlier. If a particular candidate is less compelling, the PAC will invest its money in other candidates. The decision is not *whether* to give out the $100,000, but rather *which* candidates to give it to. As a result, the PAC pays close attention to each candidate's quality. By contrast, consider a wealthy candidate with $100,000 that he could easily give to his campaign. If he did not give that money to his campaign, he might use it to buy a luxury automobile, or he might just leave it in the bank. His decision is precisely the opposite of the PAC's. That is, the decision is not *which* candidate to give the money to, but rather *whether* to spend the money at all. After all, a wealthy candidate who decides not to give $100,000 to his own campaign is unlikely to give that money to other candidates.[12] Thus, the wealthy candidate is not deciding which candidate in his area can best use his $100,000, as a PAC might do—instead, he is deciding whether he has $100,000 available to spend on himself. As a result, the dominant consideration when deciding whether to give his campaign $100,000 is his own wealth, not his viability as a candidate.

Because traditional (external) donors are strategic, we should expect external financing levels to correlate strongly with political variables related to candidate viability. That is, a candidate should be able to raise more external money if she is experienced, if she is an incumbent, or if the state's partisan leanings favor her party.

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[12] As evidence, consider the four most extreme self-financers in gubernatorial campaigns. Between 1998 and 2008, Tony Sanchez gave only $6,500 to other state-level candidates, a mere 0.01% of the $54.5 million he spent on his own campaign in 2002. The other three extreme self-financers have hardly been more generous. Doug Forrester, Dick DeVos, and Jon Corzine's contributions to other candidates total 0.13, 0.80, and 2.12% (respectively) of their contributions to their own campaigns. (Data are contributions to state-level candidates between 1998 and 2008 as collected from followthemoney.org on February 4, 2010.)

Table 1 Predictors of candidate financing

	Democrat		Republican	
	External	Self	External	Self
Democratic incumbent	−0.044	−0.21	−0.54*	0.32
	(0.26)	(0.38)	(0.24)	(0.47)
Republican incumbent	−0.98**	0.29	−0.030	−0.047
	(0.31)	(0.45)	(0.31)	(0.61)
Democrat's experience (Squire)	0.0013**	−0.00038	0.00041	−0.00087
	(0.00048)	(0.00069)	(0.00047)	(0.00092)
Republican's experience (Squire)	0.00085	0.00036	0.00067	−0.000068
	(0.00062)	(0.00090)	(0.00059)	(0.0012)
Population (logged)	0.43**	0.23	0.60**	0.021
	(0.12)	(0.18)	(0.10)	(0.20)
State's Democratic vote for president	0.016*	−0.0070	−0.0032	0.0072
	(0.0078)	(0.011)	(0.0076)	(0.015)
Incumbent's net approval (inverted for Republican incumbents)	0.020**	0.0061	−0.016**	0.023*
	(0.0059)	(0.0086)	(0.0056)	(0.011)
Opponent's external finance	0.36**	−0.12	0.31**	0.089
	(0.12)	(0.17)	(0.10)	(0.20)
Opponent's self finance	0.039	0.15+	−0.053	0.27+
	(0.061)	(0.089)	(0.073)	(0.15)
Constant	−5.40**	−2.36	−6.52**	−0.33
	(1.55)	(2.25)	(1.40)	(2.75)
Observations	85	85	85	85
Adjusted R^2	0.72	0.08	0.70	0.04

** $p < 0.01$; * $p < 0.05$, + $p < 0.10$. Standard errors in parentheses. All spending variables are measured in \$100,000s and logged

If self-financing were also strategic, then we would expect to observe the same correlations. Table 1 presents four ordinary least squares regressions predicting candidate financing. The first two models predict Democratic candidates' external- and self-financing (respectively); the final two models predict Republican candidates' financing. All these spending variables are measured in \$100,000s and logged. I include logged state population as a separate control. I also control for the opposing candidate's spending to estimate each race's intensity.[13]

As expected, external finance levels correlate strongly with candidate viability. In the first and third models, candidates raise less outside money if they are inexperienced, if their opponent is an incumbent, if the incumbent is popular, or if their state's partisan trends favor their opponent's party. All these findings suggest that campaign donors are responding strategically to the political environment when

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[13] These models exclude the three races featuring the four extreme self-financers (Corzine, Forrester, Devos, and Sanchez). Nevertheless, even with these potential outliers included, the results are similar. See Brown (2010).

deciding which candidates to fund. Unsurprisingly, external financing levels also rise with logged population, reflecting the diminishing marginal effect of population on spending levels. Candidates also raise money if their opponent raises more money, a finding that reflects campaign intensity. Together, all these variables explain a remarkable amount of the variance in external finance levels, with adjusted R^2 between 0.70 and 0.72.

By contrast, self-finance levels do not appear to correlate with anything. Incumbent popularity correlates with Republican self-finance levels, but the fit is poor. Not even state population influences self-finance levels, suggesting that self-financing decisions fail to respond even to the most basic of strategic constraints. Together, these variables explain almost none of the variance in self-financing levels, with adjusted R^2 between 0.04 and 0.08.

This analysis suggests that self-financed spending does not have the same origin as externally-financed spending. As one further piece of evidence toward this end, consider the correlation between self-financed and externally-financed spending. For both Republicans and Democrats, and for both incumbents and challengers, the correlation between self-financed spending and externally-financed spending is statistically zero.[14] These two types of spending should correlate if they have similar origins, yet they do not.

It appears that self-financed spending levels are not strategic. I have briefly presented a theoretical argument and empirical analysis toward that end. In other work, I have shown that this result is robust to a variety of different specifications (Brown 2010). If self-financed spending is not strategic, then we can use it to estimate the true effect of spending on votes, as discussed above. I will do so now.

Findings: Does Money Buy Votes?

Recall my central theoretical question: Does campaign spending have a causal relationship with vote shares, or merely a non-causal correlation? As argued above, we can shed light on that theoretical question by asking this empirical question: Does non-strategic (self-financed) spending have the same relationship with vote shares that strategic (externally financed) spending has?

Table 2 presents the results of five ordinary least squares regressions that predict the Democratic candidate's share of the gubernatorial vote using data from 1998 to 2008. As noted earlier, the spending variables are measured in $100,000s and divided by logged population. Model (1) confirms the received wisdom that total campaign spending (regardless of source) has a clear correlation with vote shares. If the Democratic candidate spends more money, her vote share goes up; if the Republican candidate spends more, the Democrat's vote share goes down. This underspecified model explains a surprising amount of the overall variance, producing an adjusted R^2 of 0.14. Holding state population constant at 4 million

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[14] For Democrats, the correlation is -0.09 ($p = 0.26$); for Republicans, it is -0.03 ($p = 0.75$). For incumbents of either party, the correlation is 0.09 ($p = 0.40$); for challengers, it is 0.14 ($p = 0.21$).

Table 2 Effects of spending on Democrat's share of the gubernatorial vote, 1998–2008

	(1)	(2)	(3)	(4)	(5)
Democrat: Total finance	0.81**	0.37*			
	(0.21)	(0.15)			
Democrat: External finance			1.57**	0.69**	1.59**
			(0.26)	(0.22)	(0.29)
× Democrat's experience (Squire)					−0.0015*
					(0.00073)
Democrat: Self finance			0.099	0.16	0.052
			(0.24)	(0.18)	(0.27)
× Democrat's experience (Squire)					0.00024
					(0.00089)
Republican: Total finance	−0.79**	−0.47**			
	(0.23)	(0.17)			
Republican: External finance			−1.40**	−0.72**	−1.53**
			(0.24)	(0.21)	(0.45)
× Republican's experience (Squire)					0.0016+
					(0.00083)
Republican: Self finance			−0.29	−0.30	−0.38
			(0.32)	(0.24)	(0.43)
× Republican's experience (Squire)					0.0021
					(0.0027)
Democratic incumbent		6.05*		5.29*	3.54
		(2.53)		(2.52)	(2.46)
Republican incumbent		−7.88*		−6.27+	−1.86
		(3.14)		(3.24)	(3.19)
Democrat's experience (Squire)		0.0036		0.0035	0.018**
		(0.0048)		(0.0047)	(0.0052)
Republican's experience (Squire)		0.0052		0.0041	−0.011+
		(0.0063)		(0.0065)	(0.0060)
State's Democratic vote for president		0.053		0.0183	−0.020
		(0.082)		(0.083)	(0.080)
Incumbent's net approval (inverted for Republican incumbents)		0.32**		0.30**	
		(0.059)		(0.058)	
Constant	47.86**	45.34**	47.59**	46.76**	45.05**
	(1.53)	(4.48)	(1.42)	(4.46)	(4.29)
Observations	88	88	88	88	145
Adjusted R^2	0.14	0.61	0.33	0.63	0.50

** $p < 0.01$; * $p < 0.05$, + $p < 0.10$. Standard errors in parentheses. All spending variables are measured in \$100,000s and divided by logged population

people and holding Republican spending at the mean, increasing the Democrat's spending from \$4 to \$5 million would be expected to raise the Democrat's vote share by half a percentage point—a modest but meaningful gain.

Model (1) is, of course, incomplete. It does not include any controls for candidate quality or for state partisan conditions. Because these variables are positively correlated both with fundraising potential and with vote shares, omitting these variables will tend to inflate our estimates of the effects of spending. Model (2) attempts to correct this problem by inserting several controls for candidate viability, such as incumbency dummies, Squire's index of candidate quality, the incumbent's popularity level, and the state's presidential vote. As expected, inserting these variables significantly reduces the estimated effects of total spending as compared to Model (1). Clearly, these variables have removed some of the omitted variable bias that was inflating the apparent effect of spending on votes. Inserting these variables also improves the fit greatly, although only some of these variables are statistically significant.

The difficulty with Model (2) is that it controls only partially for candidate viability. As noted above, voters and donors look at candidate features beyond political experience and partisanship, such as charisma, intelligence, policy proposals, and even physical attractiveness. Because these unmeasured (and perhaps unmeasurable) aspects of candidate quality are positively correlated both with fundraising potential and with vote shares, omitting them will inflate our estimates of the effects of spending. Like Model (1), then, Model (2) cannot tell us whether the relationship between spending and votes is causal or spurious.

Models (3) and (4) replicate Models (1) and (2), but with an important difference. In these latter models, I have used separate variables for externally-financed and self-financed spending. In Model (3), the estimated effect of externally-financed spending is statistically different from the estimated effect of self-financed spending, both for Democrats ($p < 0.001$) and for Republicans ($p = 0.002$). In fact, only externally-financed spending has a statistically significant relationship with vote shares; self-financed spending does not. Figure 2 depicts Model (3)'s estimates graphically, with spending variables rescaled and plotted across a subset of their observed ranges.[15] The substantive difference between the estimates is striking. Even if the estimated effect of self-financed spending were statistically significant, the size of its effect is dwarfed by the estimated effect of externally-financed spending. In fact, Bayesian model selection (see Raftery 1995) strongly supports dropping the self-finance variables entirely in order to improve the model's fit.

Self-financed spending, then, does not appear to influence voters at all. This narrow empirical finding implies much broader conclusions about the effects of spending generally. Because self-financed spending is unrelated to candidate quality or to state partisan conditions—as shown in the previous section—our inability to control perfectly for these variables does not artificially inflate the estimated effect of self-financed spending. This is readily apparent by comparing Models (3) and (4): In both, the estimated effect of self-financed spending is nearly identical. By contrast, the estimated effect of externally-financed spending is much lower in Model (4) than in Model (3). These differences suggest that omitted variable does

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[15] The line showing the effects of self-finance holds external finance at zero, and vice versa. Opponents are assumed to spend an average amount of externally-financed money but no self-financed money.
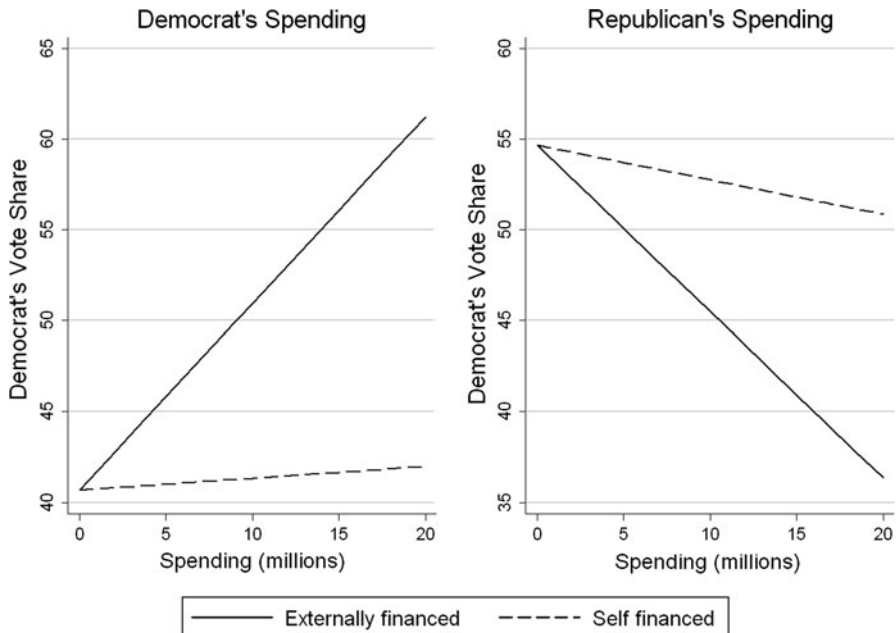
Fig. 2 Effects of spending in gubernatorial elections

inflate the estimated effect of externally-financed spending, but not of self-financed spending. The additional controls in Model (4) sharply reduce this omitted variable bias, resulting in a reduced estimated effect of externally-financed spending. But just as Model (2) could not control perfectly for candidate quality, neither can Model (4). It is this continuing omitted variable bias in Model (4) that causes self- and externally-financed spending to have such dramatically different estimated effects. If our ability to operationalize and control for candidate viability approached perfection, then the estimated effect of externally-financed spending would approach the estimated effect of self-financed spending.

Robustness

The key finding, then, is that externally financed spending correlates with vote shares but self-financed spending does not. This result is robust to a variety of alternative specifications and operationalizations. I have mentioned several of those alternatives in passing already. For example, these findings persist even when I use other methods to adjust the spending variables for population, such as using per capita spending, total spending, or other approaches. These findings also persist when I use alternative measures of challenger experience that are more straight-forward than Squire's index. In the interest of space, I have relegated most of these alternative specifications to an online appendix. I also show in the online appendix that there are no influential outliers driving these results. In particular, I show in the

online appendix that omitting extreme self-financers from my analysis does not change my conclusions.

I include one alternative specification here to illustrate the robustness of these findings. Model (5) differs from Model (4) in two ways. First, I have dropped the incumbent governor's approval rating, thereby increasing the sample size by 65%. Second, I have interacted candidate spending with candidate experience. Research within the Congressional literature has suggested that spending may have different effects for challengers than for incumbents. That is, there is disputed evidence that incumbents reap fewer electoral benefits from campaign spending than challengers do (Jacobson 1978, 1980, 1984, 1985, 1990; Green and Krasno 1988, 1990). Consistent with this literature, the interactions in Model (5) do, indeed, suggest that the correlation between externally-financed spending and votes is stronger for political novices than for incumbents. If a Democratic candidate had no experience (i.e. Squire's index is zero), the estimated coefficient for her externally financed spending would be 1.59. If the same candidate were an incumbent governor (i.e. Squire's index is 600), the estimated coefficient would fall to 0.67. There is a similar interaction for Republican candidates. Once again, however, the estimated effect of self-financed spending is statistically zero, and its interactions with self-finance do not remotely approach statistical significance. Apparently, the same omitted variable bias that causes Model (3) to differ from Model (4) also causes an interaction effect between candidate experience and externally financed spending. This point is not central to this article, so I will relegate commentary on it to the footnotes.[16] I include Model (5) only to demonstrate the robustness of my findings to alternative specifications. I present several other alternative specifications in the online appendix.

There is one possible threat to my results that I cannot directly control for. As Alexander writes, "[I]t may be the case that self-financing results in criticism that costs wealthy candidates votes" (2005, p. 356). That is, negative reactions by voters against a candidate's attempt to "buy" an election might cancel out any positive effects that might be produced by additional spending. Ongoing experimental work by Dowling and Miller (n.d.) suggests that voters do not punish self-financers, however. In a randomized survey experiment, Dowling and Miller manipulated the supposed source of a candidate's campaign financing. They find that voters punish candidates for accepting money from organized interest groups, but they do not punish candidates for self-financing their campaigns.

The pattern throughout all the models in Table 2 is that externally-financed spending has a statistically significant relationship with votes, but self-financed spending does not. These findings do not appear to be the product of any

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[16] Perhaps it is easier to measure an incumbent's "quality" than a newcomer's. Within a group of first-time candidates, some will have political talent while others will not; the electoral process has not yet revealed which are which. Meanwhile, past elections have already revealed present incumbents as "quality" contenders. Essentially, incumbency indicates less empirical uncertainty about a candidate's quality, whereas non-incumbency indicates greater empirical uncertainty. As a result, the omitted variable bias that plagued Models (1) and (3) would also plague political newcomers more than it plagues incumbents, causing us to overestimate the effect of spending by newcomers far more than we overestimate the effect of spending by incumbents.

measurement or specification decisions. The insignificance of the self-finance variables in Models (3) and (4) implies that much of the estimated effect of (total) spending in Models (1) and (2) was produced by externally-financed spending, with self-financed spending contributing little more than statistical noise. However, it also appears that much of the statistical "effect" of externally-financed spending on votes is itself caused by omitted variable bias. Because potential donors respond strategically to the same candidate viability concerns as voters do, our inability to control perfectly for candidate viability inflates the apparent effect of externally-financed spending on votes. All this implies that the widely discussed correlation between spending and votes is spurious to some extent.

Discussion

Self-financed spending does not have a correlation with election results, but externally-financed spending does. This narrow empirical finding is interesting of itself. In 2010, former eBay CEO Meg Whitman self-financed an astounding $144 million in her bid for California governor. Her self-financing alone more than tripled the relatively meager $40 million that her opponent, Jerry Brown, raised from all sources combined. Despite this infusion of cash, Whitman lost to Brown by nearly 13 percentage points. If nothing else, this analysis should alleviate the concerns that inevitably arise whenever a wealthy candidate declares his or her candidacy for high office. Self-financed candidates cannot buy their way into office.

This article's main contribution has nothing to do with self-finance, though. Otherwise, this article might not have much to say. Alexander (2005) and Steen (2006) have already shown that self-finance has weak effects on election day, at least in the Congressional context. This article's main contribution is not that self-finance does little to help candidates win. Rather, this article's main contribution lies in its novel theoretical interpretation of this empirical oddity. If self-financed spending does not correlate with election results, we ought to seriously ponder why spending from other sources does. Consider, once again, the two theoretical possibilities sketched out in Fig. 1. If money spent on advisors and advertisements had a direct effect on votes, then it would not matter whether that money came from outside donors or from the candidate's own wallet. As it turns out, the money's source does matter. Externally-financed spending has a strong correlation with votes, but self-financed spending does not. We can conclude that a candidate's ability to raise money does more to create this correlation than her decision to spend it does. Simply put, money does not buy many votes in gubernatorial elections.

Of course, this conclusion generates a new puzzle. If money does not generate votes, then why do politicians commit so much time to raising and spending it? There are many possible explanations. For example, perhaps candidates fundraise to signal their viability to voters. Even if voters are not persuaded at all by slick campaign advertisements, they may nevertheless glean information from the fact that a candidate was able to raise enough money to produce slick ads in the first place. Previous work has shown that an experienced candidate's decision to leave a lower office in order to challenge a sitting incumbent in a higher office sends a

costly signal that conveys important information to voters about the incumbent's vulnerability (Gordon et al. 2007). By similar logic, donors' collective decisions to finance a particular candidate may convey important information about that candidate's viability.[17]

There are also other possible reasons that candidates may raise money, even if spending it has no effect. Perhaps candidates raise and spend money to signal their viability to political elites, such as potential challengers who might be deterred by a candidate's early fundraising success (but see Goodliffe 2001, 2007). Alternatively, perhaps candidates solicit funds to create a more committed activist base. Psychological research has shown that even a minor verbal commitment can cause people to agree to far more serious commitments later on (Cialdini 2008). By this logic, candidates might expect supporters who make a donation to become far more committed to the campaign as a result. If it is correct that campaign spending has minimal effects, then future research should consider other possible motivations for raising and spending money.

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[17] By the same logic, some might think that voters would observe a wealthy challenger's decision to self-finance as a similar signal about the incumbent's vulnerability. Given that self-financers are typically far wealthier than average voters, however, voters may not see a candidate's decision to spend a few million out of her multimillion accounts as a "costly" signal.

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